AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-69. (Cancelled).

70. (Currently Amended) A cooling system for a computer system processing unit, comprising:

an integrated element, a heat radiator, and a fan, wherein the integrated element comprises a heat exchanging interface, a reservoir, and a pump;

wherein the reservoir is adapted to receive a cooling liquid from outside the reservoir through an inlet and pass the cooling liquid to outside the reservoir through an outlet, the reservoir comprising an upper chamber and a lower chamber, the upper chamber and the lower chamber being separate chambers that are fluidly coupled together by an inlet passage and an outlet passage, the inlet passage being a passage that directs the cooling liquid from the upper chamber to the lower chamber and the outlet passage being a passage that directs the cooling liquid from the lower chamber to the upper chamber, ~~and a separate~~ the lower chamber having a recessed cavity and a plurality of channels adapted to direct flow of the cooling liquid across the heat exchanging interface;

the heat radiator is connected between the outlet and the inlet and is adapted to exhaust heat from the cooling liquid, the heat radiator being configured to circulate the cooling liquid therethrough;

the heat exchanging interface is adapted to provide thermal contact between the processing unit and the cooling liquid, such that heat is dissipated from the processing unit to the cooling liquid as the cooling liquid passes across the heat exchanging interface, the heat exchanging interface being removably attached to the reservoir such that the heat exchanging interface forms a boundary surface of the plurality of channels and the recessed cavity;

the pump being adapted to pump the cooling liquid through the reservoir and the heat radiator, the pump including an AC motor having a rotor, a stator and an impeller having a plurality of blades configured to increase an efficiency of the impeller when rotating in a

predetermined rotational direction, the impeller being mechanically integrated with the rotor and positioned ~~in~~ within the recessed cavity of the lower chamber such that ~~an entire~~ a bottom face of the impeller ~~is completely exposed to~~ faces an inside surface of the heat exchanging interface, an AC voltage to operate the motor being generated from a DC power supply of the computer system, a characteristic of the AC voltage directed to the motor during starting of the motor being based at least on an angular position of the rotor and the predetermined rotational direction; and

the fan being configured to direct air through the heat radiator, the fan being driven by a motor separate from the AC motor of the pump.

71. (Cancelled).

72. (Currently amended) The cooling system of claim 70, wherein the plurality of channels are formed integral to the reservoir ~~or integral to the inner surface of the heat exchanging interface~~.

73. (Previously Presented) The cooling system of claim 70, wherein the pump is disposed within the reservoir.

74-76. (Cancelled).

77. (Previously presented) The cooling system of claim 70, wherein the inside surface of the heat exchanging interface forms one end of the recessed cavity.

78. (Previously Presented) The cooling system of claim 70, wherein the pump comprises one selected from a group consisting of: a bellows pump, centrifugal pump, diaphragm pump, drum pump, flexible liner pump, flexible impeller pump, gear pump, peristaltic tubing pump, piston pump, processing cavity pump, pressure washer pump, rotary lobe pump, rotary vane pump and electro-kinetic pump.

79. (Previously Presented) The cooling system of claim 70, wherein the AC motor is a 12V AC motor.

80. (Previously presented) The cooling system of claim 70, wherein a speed of the fan is configured to be varied independent of a speed of the impeller of the pump.

81. (Previously Presented) The cooling system of claim 70, wherein the AC voltage directed to the motor is independent of a line voltage powering the DC power supply.

82. (Previously presented) The cooling system of claim 70, wherein the integrated element is separate from the heat radiator and are fluidly coupled together by tubing such that the heat radiator can be positioned at a location away from the integrated element when the heat exchanging interface is in thermal contact with the processing unit.

83-102. (Cancelled).

103. (Currently Amended) A cooling system for a computer system processing unit, comprising:

a reservoir configured to be coupled to the processing unit, the reservoir being adapted to pass a cooling liquid therethrough, wherein the reservoir includes an upper chamber and a lower chamber, the upper chamber and the lower chamber being separate chambers that are fluidly coupled together by an inlet passage and an outlet passage, the inlet passage being a passage that directs the cooling liquid from the upper chamber to the lower chamber and the outlet passage being a passage that directs the cooling liquid from the lower chamber to the upper chamber, the ~~reservoir including an upper chamber and a separate~~ lower chamber of the reservoir including ~~having~~ a recessed cavity, the reservoir further including a heat exchanging interface in thermal contact with the processing unit, the heat exchanging interface being removably attached to the reservoir such that the heat exchanging interface forms a boundary wall of the lower chamber of the reservoir;

a heat radiator fluidly coupled to the reservoir and configured to be positioned at a location away from the reservoir when the reservoir is coupled to the processing unit;

a fan adapted to direct air to the heat radiator to dissipate heat from the cooling liquid to surrounding atmosphere;

a pump configured to circulate the cooling liquid between the reservoir and the heat radiator, the pump including an AC motor having a rotor, a stator, and an impeller, the impeller being mechanically coupled to the rotor and at least partially submerged in the cooling liquid in the reservoir, the ~~stator being positioned in the upper chamber and the~~ impeller being positioned in the recessed cavity such that ~~an entire~~ a bottom face of the impeller faces ~~is completely exposed to~~ an inside surface of the heat exchanging interface, a speed of the impeller being configured to be varied independent of the speed of the fan, the AC motor being powered by a DC power supply of the computer system.

104. (Previously Presented) The cooling system of claim 103, wherein the impeller includes a plurality of blades having a curved shape, the curved shape being configured to increase an efficiency of the impeller when rotating in a predetermined direction.

105. (Previously Presented) The cooling system of claim 104, wherein at a start of the motor, a signal to the motor is based at least partly on an angular position of the rotor, and the signal is configured to rotate the impeller in the predetermined direction.

106. (Previously Presented) The cooling system of claim 103, wherein the AC motor is a 12V AC motor.

107. (Previously Presented) The cooling system of claim 103, wherein at least one of a location of the pump or a configuration of the reservoir is selected to create a turbulence of cooling liquid flow proximate the heat exchanging interface.

108. (Currently Amended) A method of operating a cooling system for an electronic component of a computer system, comprising:

circulating a cooling liquid between a reservoir coupled to the electronic component and a heat radiator using a pump, wherein the reservoir includes an upper chamber and a lower chamber, the upper chamber and the lower chamber being separate chambers that are fluidly

coupled together by an inlet passage and an outlet passage, the inlet passage being a passage that directs the cooling liquid from the upper chamber to the lower chamber and the outlet passage being a passage that directs the cooling liquid from the lower chamber to the upper chamber, the ~~reservoir including an upper chamber and a separate~~ lower chamber of the reservoir including ~~that includes~~ a recessed cavity, the pump including a first motor and an impeller mechanically coupled to a rotor of the first motor, the impeller being submerged in the cooling liquid of the reservoir and having a shape configured to increase an efficiency of the impeller when rotating in a predetermined rotational direction the impeller being positioned ~~in~~ within the recessed cavity such that ~~an entire~~ a bottom face of the impeller ~~is completely exposed to~~ faces an inside surface of the heat exchanging interface;

detecting an angular position of the rotor;

starting the first motor by applying an AC voltage to the first motor from a DC power supply of the computer system, a characteristic of the AC voltage directed to the first motor being selected based on at least the detected angular position and the predetermined rotational direction; and

dissipating heat from the heat radiator by directing air therethrough using a fan driven by a second motor separate from the first motor such that a speed of the fan may be varied independently of the speed of the impeller.

109. (Previously presented) The method of claim 108, wherein the detection of the angular position of the rotor is performed before starting the first motor.

110. (Previously presented) The method of claim 108, wherein applying an AC voltage to the first motor includes applying an AC voltage to the first motor from a DC power supply of the computer system.

111. (Previously presented) The method of claim 110, wherein the AC voltage to the first motor is independent of a line voltage used to power the DC power supply.

112. (Previously presented) The method of claim 108, wherein the method further includes thermally coupling the heat exchanging interface to the electronic component and positioning the heat radiator at a location away from the reservoir.

113. (Cancelled).

114. (Currently amended) The cooling system of claim ~~113~~ 70, wherein the upper chamber and the lower chamber are fluidly coupled together by only one inlet passage and only one outlet passage.

115. (Currently amended) The cooling system of claim ~~113~~ 70, wherein the lower chamber includes the plurality of channels and the recessed cavity and the upper chamber includes the motor.

116. (Previously presented) The cooling system of claim 114, wherein the plurality of channels includes at least one channel that directs the cooling liquid from the inlet passage to the outlet passage through multiple bends across the heat exchange interface.

117. (Cancelled).